Summary Table of the minimum number of samples necessary to identify Exposure Point Concentrations for human and ecological risk evaluation

Constituent	Human Health Risk Screening Value (mg/kg)	Quantity of historical samples	Maximum Detected Concentration (mg/kg)	Arithmetic Mean Concentration (mg/kg)	Standard Deviation (mg/kg)	Calculated quantity of samples for statistical power [1]	VSP calculated quantity of samples: delta = diff(mean, threshold) [1]	VSP calculated quantity of samples: delta = 50% of threshold [2]	Quanity of additional samples to collect	Comments
AOC-1: Surface Soil										
Aluminium	6500	41	25400	5726	5176	364	365	23	None	
Arsenic	0.39	41	3.1	1.25	0.9	11	11	184	None	
Benzo(a)anthracene	0.15	41	3.97	0.24	0.69	428	430	741		
Benzo(a)pyrene	0.015	41	0.775	0.11	0.18	30	31	5055	None	
Benzo(b)fluoranthene	0.15	41	1.03	0.13	0.2	2091	2094	65		
Chromium	200	41	14.9	4.98	3.52	1	2	2	None	
Lead	400	41	80.7	14.32	17.88	1	2	2	None	
Mercury	2	41	0.74	0.03	0.11	1	2	2	None	
Vanadium	290	41	29.3	7.64	6.38	1	2	2	None	
Zinc	9900	39	232	48.56	46.95	1	2	2	None	
AOC-1:Surface Soil number of additional samples needed for Human Health Risk Evaluation										
AOC-1: Subsurface Soil										
Aluminium	6500	41	13800	3554	3362	12	13	11	None	
Arsenic	0.39	41	2.2	0.64	0.58	49	48	79	None	Maximum detected concentration is less than background for Texas.
Chromium	200	41	15	3.09	2.69	1	2	2	None	
Lead	400	41	26	3.75	3.96	1	2	2	None	
Mercury	2	41	0.59	0.02	0.09	1	2	2	None	
Vanadium	290	41	13.7	3.96	3.4	1	2	2	None	
AOC-1:Subsurface Soil number of additional samples needed for Human Health Risk Evaluation									None	

Notes:

1 - To be provided by Loren…reference for this type of delta

2 - 50% of threshold chosen in accordance with VSP User Guide, Version 5.0, September 2007, page 3.7, "[Delta] *probabilities are 20% to 95%* [of threshold], *i.e. from beta to 1-alpha … Determining a reasonable value for the size of the gray region calls for professional judgment and cost/benefit evaluation.* "

See ***[Loren's prior work]*** for calculated quantity of samples necessary for statistical power.